



OIPE

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## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/846,589A

DATE: 03/11/2002

TIME: 09:44:16

Input Set : A:\BB-1191 Seq List.txt  
 Output Set: N:\CRF3\03112002\I846589A.raw

3 <110> APPLICANT: Famodu, Layo O.  
 4 Orozco, Buddy  
 5 Rafalski, Antoni  
 7 <120> TITLE OF INVENTION: Plant Aminoacyl-tRNA Synthetase  
 9 <130> FILE REFERENCE: BB-1191  
 C--> 11 <140> CURRENT APPLICATION NUMBER: US/09/846,589A  
 C--> 12 <141> CURRENT FILING DATE: 2002-01-22  
 14 <150> PRIOR APPLICATION NUMBER: 60/092,866  
 W--> 15 <151> PRIOR FILING DATE: July 15, 1998  
 17 <160> NUMBER OF SEQ ID NOS: 29  
 19 <170> SOFTWARE: Microsoft Office 97  
 21 <210> SEQ ID NO: 1  
 22 <211> LENGTH: 1948  
 23 <212> TYPE: DNA  
 24 <213> ORGANISM: Zea mays  
 26 <400> SEQUENCE: 1  
 27 cgcacgatag ccgcgcgcgt cgaccagagc actccccgt cgtcgcacg atgtcgtctg 60  
 28 agcctccacc cgcctcctct gcccgcgcg gagaggaact cgctgctgac cttccgcgcg 120  
 29 ctacccttag caagaagcag cagaagaagg acgcgaggaa ggcggagaag gcagagcagc 180  
 30 gccagcgtca gcagcagcag cagcagcagc cggcggacgc cgaggacccg ttcgcggcca 240  
 31 actacggcga ggtcccccgtc gaggagatcc agtcaaaggc catctccggc cgctcgtgg 300  
 32 cccatgtcgg cgacctcgac gactccgctg cggccgcgc cgtgcttatac cgcggagccg 360  
 33 cgcaggccat ccgtccggc agcaagaaga tggcttcgt cgtgctgcgc cagagtatga 420  
 34 gcaccgtgca gtgcgtgctc gtgcgcagcg ccgacgcggc cgtcagcacg cagatggtgc 480  
 35 gcttcgcac cgcctcagc aaggagtcca tcgtcgacgt tgaggcgctc gtctccctcc 540  
 36 caaaggagcc cctcaaggcc accacacagc aggtttagat ccaagtggagg aagatctatt 600  
 37 gcatcaatacg ggctattccg acccttccaa ttaaccttga agatgcggct cggagtggagg 660  
 38 cagattttga gaaggctgaa ttggctggag aaaagcttgc tcgcgttgc caagatacc 720  
 39 gcttgaacta cagagctatt gatctacgaa caccctcgaa tcaagccata ttccggatcc 780  
 40 agtgtcaagt tggaaacaaa tttagagatt ttttggatc gaagaacttt gtcggatcc 840  
 41 acaccccaaa attgatttct ggatcttagt aagggggtgc ggctgtattc aagttctgt 900  
 42 acaatggtca acctgttgtt ttggcacaat cccctcagtt atacaagcaa atggctatct 960  
 43 ctgggtgtt tgagcgacta ttggatgtcg cccctgtgtt tagagcagaa aattcaaaca 1020  
 44 cacacaggca tctatgtgag ttgcgttgc ttgatgtga aatggagatt aaggaggatt 1080  
 45 attttgaggt ctgtgacatt atagatggct tattcgtatc aatatttaaa cacttgtct 1140  
 46 aaaactgcaa gaaagaactc gaatcaataa acaggcagta tccatttgc cctctgaat 1200  
 47 atctagacaa aacctttaag ctcactttag aagaaggaat tcaaattgtt aaggaagccg 1260  
 48 gaacagaaat cgaccatcg ggtgacacta ataccgaagc tgagaaaaaa cttggcggc 1320  
 49 ttgtcaggaa aaagtatgac acagatttt tcattctgtt tcggatgtt ttggatgtac 1380  
 50 gtcgcgttcta caccatgcct ttgtatgaca acccagcgta caccatctt tttgtatgtt 1440  
 51 tcattcgagg cgaggagata atatctggag cacaaggat acacactctt gagctgtgg 1500  
 52 ccaagcgcgc gacagagtgt ggaatcgacg tgagcactat ctgcgcctac attgaatct 1560  
 53 tcagctatgg cgtgcgcgc caccggcggtt tcgggtggg tttggagagg gtggatgtc 1620

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54 tggctgtgc cctgaacaac atcaggaaga cctccctgtt cccgcgcac ccgcagaggc 1680  
 55 tcgtccgta agtttctgat tccaaggctg agtcttcgag tggctacgg agcagatccg 1740  
 56 atgttggta catcagagtt gacttgcattt cttagctcctt gaacctggcg gttaccgtgg 1800  
 57 atcagagttc ctgttgaatt tcacaaaagc ctacttgcattt ctaatagatt gctgcaacca 1860  
 58 acaatattac gacccttcg ggctttctt cccgcctcac gtgttattctt ggtctatact 1920  
 59 tggtttaag tgcaagtatt gtcagtt 1948  
 61 <210> SEQ ID NO: 2  
 62 <211> LENGTH: 546  
 63 <212> TYPE: PRT  
 64 <213> ORGANISM: Zea mays  
 66 <400> SEQUENCE: 2  
 67 Met Ser Ser Glu Pro Pro Pro Ala Ser Ser Ala Ala Ala Gly Glu Glu  
 68 1 5 10 15  
 70 Leu Ala Ala Asp Leu Ser Ala Ala Thr Leu Ser Lys Lys Gln Gln Lys  
 71 20 25 30  
 73 Lys Asp Ala Arg Lys Ala Glu Lys Ala Glu Gln Arg Gln Arg Gln Gln  
 74 35 40 45  
 76 Gln Gln Gln Gln Pro Ala Asp Ala Glu Asp Pro Phe Ala Ala Asn  
 77 50 55 60  
 79 Tyr Gly Glu Val Pro Val Glu Glu Ile Gln Ser Lys Ala Ile Ser Gly  
 80 65 70 75 80  
 82 Arg Ser Trp Ser His Val Gly Asp Leu Asp Asp Ser Ala Ala Gly Arg  
 83 85 90 95  
 85 Ser Val Leu Ile Arg Gly Ala Ala Gln Ala Ile Arg Pro Val Ser Lys  
 86 100 105 110  
 88 Lys Met Ala Phe Val Val Leu Arg Gln Ser Met Ser Thr Val Gln Cys  
 89 115 120 125  
 91 Val Leu Val Ala Ser Ala Asp Ala Gly Val Ser Thr Gln Met Val Arg  
 92 130 135 140  
 94 Phe Ala Thr Ala Leu Ser Lys Glu Ser Ile Val Asp Val Glu Gly Val  
 95 145 150 155 160  
 97 Val Ser Leu Pro Lys Glu Pro Leu Lys Ala Thr Thr Gln Gln Val Glu  
 98 165 170 175  
 100 Ile Gln Val Arg Lys Ile Tyr Cys Ile Asn Arg Ala Ile Pro Thr Leu  
 101 180 185 190  
 103 Pro Ile Asn Leu Glu Asp Ala Ala Arg Ser Glu Ala Asp Phe Glu Lys  
 104 195 200 205  
 106 Ala Glu Leu Ala Gly Glu Lys Leu Val Arg Val Gly Gln Asp Thr Arg  
 107 210 215 220  
 109 Leu Asn Tyr Arg Ala Ile Asp Leu Arg Thr Pro Ser Asn Gln Ala Ile  
 110 225 230 235 240  
 112 Phe Arg Ile Gln Cys Gln Val Glu Asn Lys Phe Arg Asp Phe Leu Leu  
 113 245 250 255  
 115 Ser Lys Asn Phe Val Gly Ile His Thr Pro Lys Leu Ile Ser Gly Ser  
 116 260 265 270  
 118 Ser Glu Gly Gly Ala Ala Val Phe Lys Leu Leu Tyr Asn Gly Gln Pro  
 119 275 280 285  
 121 Ala Cys Leu Ala Gln Ser Pro Gln Leu Tyr Lys Gln Met Ala Ile Ser  
 122 290 295 300

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124 Gly Gly Phe Glu Arg Val Phe Glu Val Gly Pro Val Phe Arg Ala Glu  
125 305 310 315 320  
127 Asn Ser Asn Thr His Arg His Leu Cys Glu Phe Val Gly Leu Asp Ala  
128 325 330 335  
130 Glu Met Glu Ile Lys Glu His Tyr Phe Glu Val Cys Asp Ile Ile Asp  
131 340 345 350  
133 Gly Leu Phe Val Ser Ile Phe Lys His Leu Ser Glu Asn Cys Lys Lys  
134 355 360 365  
136 Glu Leu Glu Ser Ile Asn Arg Gln Tyr Pro Phe Glu Pro Leu Lys Tyr  
137 370 375 380  
139 Leu Asp Lys Thr Phe Lys Leu Thr Tyr Glu Glu Gly Ile Gln Met Leu  
140 385 390 395 400  
142 Lys Glu Ala Gly Thr Glu Ile Glu Pro Met Gly Asp Leu Asn Thr Glu  
143 405 410 415  
145 Ala Glu Lys Lys Leu Gly Arg Leu Val Arg Glu Lys Tyr Asp Thr Asp  
146 420 425 430  
148 Phe Phe Ile Leu Tyr Arg Tyr Pro Leu Ala Val Arg Pro Phe Tyr Thr  
149 435 440 445  
151 Met Pro Cys Tyr Asp Asn Pro Ala Tyr Thr Asn Ser Phe Asp Val Phe  
152 450 455 460  
154 Ile Arg Gly Glu Glu Ile Ile Ser Gly Ala Gln Arg Ile His Thr Pro  
155 465 470 475 480  
157 Glu Leu Leu Ala Lys Arg Ala Thr Glu Cys Gly Ile Asp Val Ser Thr  
158 485 490 495  
160 Ile Ser Ala Tyr Ile Glu Ser Phe Ser Tyr Gly Val Pro Pro His Gly  
161 500 505 510  
163 Gly Phe Gly Val Gly Leu Glu Arg Val Val Met Leu Phe Cys Ala Leu  
164 515 520 525  
166 Asn Asn Ile Arg Lys Thr Ser Leu Phe Pro Arg Asp Pro Gln Arg Leu  
167 530 535 540  
169 Val Pro  
170 545  
172 <210> SEQ ID NO: 3  
173 <211> LENGTH: 730  
174 <212> TYPE: DNA  
175 <213> ORGANISM: Oryza sativa  
177 <400> SEQUENCE: 3  
178 gcacgagctt acacggcacg agcttacagg aattcaaatg ctgaaggaag ctgaaacaga 60  
179 aatcgacccc atgggtgacc tcaacactga agctgagaaa aaactaggcc ggcttgttaa 120  
180 ggagaagttat ggaacagaat ttttcatcct ctatcggtat cctttggctg tgcgtccctt 180  
181 ctacaccatg cttgttatg acaacccacg ttacagtaac tctttgtatg tctttattcg 240  
182 aggagaggaa ataatatctg gagcacaaag aatacattt ccagagctat tgacgaaacg 300  
183 tgcaacagag tgtgaaattt atgcgagttac tatttcatca tatatcgaaat cgttcagcta 360  
184 tggtgacact cctcatggtg gtttgggtt cggcctggag aggggtggtaa tgctgttctg 420  
185 cggccctaaac aacatcgga agacatcaat tttccctcgc gatccacaaa ggctggtgcc 480  
186 ataatttgc tttttccca agagcaaggt ttggactcg tacggactgg gcagttttcc 540  
187 tcggctgggtt ttttacctg gacattattt tctgtattttat taatgtgctg tactgcaaaa 600  
188 gctgctcctt tccacaacat ttgaaatagt tgccgataca tttgaaatag ggctcaacgt 660  
189 tggcggttgat atttcgttga tgatcccgct attcgtaaca aaaaaaaaaa aaaaaaaaaa 720

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Input Set : A:\BB-1191 Seq List.txt  
Output Set: N:\CRF3\03112002\I846589A.raw

190 aaaaaaaaaaa 730  
 192 <210> SEQ ID NO: 4  
 193 <211> LENGTH: 148  
 194 <212> TYPE: PRT  
 195 <213> ORGANISM: Oryza sativa  
 197 <400> SEQUENCE: 4  
 198 Met Leu Lys Glu Ala Gly Thr Glu Ile Glu Pro Met Gly Asp Leu Asn  
 199 1 5 10 15  
 201 Thr Glu Ala Glu Lys Lys Leu Gly Arg Leu Val Lys Glu Lys Tyr Gly  
 202 20 25 30  
 204 Thr Glu Phe Phe Ile Leu Tyr Arg Tyr Pro Leu Ala Val Arg Pro Phe  
 205 35 40 45  
 207 Tyr Thr Met Pro Cys Tyr Asp Asn Pro Ala Tyr Ser Asn Ser Phe Asp  
 208 50 55 60  
 210 Val Phe Ile Arg Gly Glu Ile Ile Ser Gly Ala Gln Arg Ile His  
 211 65 70 75 80  
 213 Leu Pro Glu Leu Leu Thr Lys Arg Ala Thr Glu Cys Gly Ile Asp Ala  
 214 85 90 95  
 216 Ser Thr Ile Ser Ser Tyr Ile Glu Ser Phe Ser Tyr Gly Ala Pro Pro  
 217 100 105 110  
 219 His Gly Gly Phe Gly Val Gly Leu Glu Arg Val Val Met Leu Phe Cys  
 220 115 120 125  
 222 Ala Leu Asn Asn Ile Arg Lys Thr Ser Leu Phe Pro Arg Asp Pro Gln  
 223 130 135 140  
 225 Arg Leu Val Pro  
 226 145  
 228 <210> SEQ ID NO: 5  
 229 <211> LENGTH: 1109  
 230 <212> TYPE: DNA  
 231 <213> ORGANISM: Glycine max  
 233 <400> SEQUENCE: 5  
 234 gcacgaggc atcagagaga atggcttcac cgttcaatgc ttggtgcaagg cgcaaggccga 60  
 235 tacggtgagc ccgcagatgg tgaagttcgc cgctgcactc agccgcgagt ccatcgctcga 120  
 236 tgtcgaaggc gttgttcga tcccctccgc tcccatcaaa ggcgccacac aacaggtgga 180  
 237 aattcaagtg aggaagttgt attgtgtcag tagggctgta cctactctgc ctattaatct 240  
 238 tgaggatgct gctcgaagtg aagttgaaat cgagacggct cttcaggctg gtgagcaact 300  
 239 tgttcgtgtt aatcaggata cacgtctgaa ctttagggtg cttgatgtgc gaacgccagc 360  
 240 taatcaaggg atttccgca ttcaagtctca agttggaaat gcgtttagac aattcttatt 420  
 241 atctgaagggt ttttgtaaa tccacactcc aaagttgata gctggatcta gtgagggagg 480  
 242 agctgctgtt tttagactgg actacaaagg tcaacctgca tgcctggccc agtcacctca 540  
 243 gttcacaag caaatgtcta tttgtggaga ttttggccgt gttttgaga ttgtcctgt 600  
 244 gtttagagca gaagattcct acactcacag gcatctgtgt gagtttacag gtcttgatgt 660  
 245 tgaatggag attaagaagc attacttta gtttatggat atagtcgata gattgtttgt 720  
 246 cgcaatgttt gacagttga accagaattt taagaaggat ctggaagctg tcgggtctca 780  
 247 gtatccattt gaaccttta agtatctgca gacgacacta cggcttacat atgaagaagg 840  
 248 gattcagatg ctcaaggatg ttggagttaga aattgaacct tatggtgact tgaatactga 900  
 249 agcggaaagg aaattgggtc agctagtctc agagaaatat ggcacagagt tctatatcct 960  
 250 tcaccggtagc ccttggctg taaggccatt ctatacaatg ccttgctacg acaatcctgc 1020  
 251 atacagcaac tcgttttagtgc tctttattcg aggtgaggag ataatttcag gagctcagcg 1080

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Input Set : A:\BB-1191 Seq List.txt  
Output Set: N:\CRF3\03112002\I846589A.raw

252 tgttcatgtg ccagaatttt tggaacaag 1109  
 254 <210> SEQ ID NO: 6  
 255 <211> LENGTH: 369  
 256 <212> TYPE: PRT  
 257 <213> ORGANISM: Glycine max  
 259 <400> SEQUENCE: 6  
 260 His Glu Val Ile Arg Glu Asn Gly Phe Thr Val Gln Cys Leu Val Gln  
 261 1 5 10 15  
 263 Ala Gln Ala Asp Thr Val Ser Pro Gln Met Val Lys Phe Ala Ala Ala  
 264 20 25 30  
 266 Leu Ser Arg Glu Ser Ile Val Asp Val Glu Gly Val Val Ser Ile Pro  
 267 35 40 45  
 269 Ser Ala Pro Ile Lys Gly Ala Thr Gln Gln Val Glu Ile Gln Val Arg  
 270 50 55 60  
 272 Lys Leu Tyr Cys Val Ser Arg Ala Val Pro Thr Leu Pro Ile Asn Leu  
 273 65 70 75 80  
 275 Glu Asp Ala Ala Arg Ser Glu Val Glu Ile Glu Thr Ala Leu Gln Ala  
 276 85 90 95  
 278 Gly Glu Gln Leu Val Arg Val Asn Gln Asp Thr Arg Leu Asn Phe Arg  
 279 100 105 110  
 281 Val Leu Asp Val Arg Thr Pro Ala Asn Gln Gly Ile Phe Arg Ile Gln  
 282 115 120 125  
 284 Ser Gln Val Gly Asn Ala Phe Arg Gln Phe Leu Leu Ser Glu Gly Phe  
 285 130 135 140  
 287 Cys Glu Ile His Thr Pro Lys Leu Ile Ala Gly Ser Ser Glu Gly Gly  
 288 145 150 155 160  
 290 Ala Ala Val Phe Arg Leu Asp Tyr Lys Gly Gln Pro Ala Cys Leu Ala  
 291 165 170 175  
 293 Gln Ser Pro Gln Leu His Lys Gln Met Ser Ile Cys Gly Asp Phe Gly  
 294 180 185 190  
 296 Arg Val Phe Glu Ile Gly Pro Val Phe Arg Ala Glu Asp Ser Tyr Thr  
 297 195 200 205  
 299 His Arg His Leu Cys Glu Phe Thr Gly Leu Asp Val Glu Met Glu Ile  
 300 210 215 220  
 302 Lys Lys His Tyr Phe Glu Val Met Asp Ile Val Asp Arg Leu Phe Val  
 303 225 230 235 240  
 305 Ala Met Phe Asp Ser Leu Asn Gln Asn Cys Lys Lys Asp Leu Glu Ala  
 306 245 250 255  
 308 Val Gly Ser Gln Tyr Pro Phe Glu Pro Leu Lys Tyr Leu Arg Thr Thr  
 309 260 265 270  
 311 Leu Arg Leu Thr Tyr Glu Glu Gly Ile Gln Met Leu Lys Asp Val Gly  
 312 275 280 285  
 314 Val Glu Ile Glu Pro Tyr Gly Asp Leu Asn Thr Glu Ala Glu Arg Lys  
 315 290 295 300  
 317 Leu Gly Gln Leu Val Ser Glu Lys Tyr Gly Thr Glu Phe Tyr Ile Leu  
 318 305 310 315 320  
 320 His Arg Tyr Pro Leu Ala Val Arg Pro Phe Tyr Thr Met Pro Cys Tyr  
 321 325 330 335  
 323 Asp Asn Pro Ala Tyr Ser Asn Ser Phe Asp Val Phe Ile Arg Gly Glu

**VERIFICATION SUMMARY**

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Input Set : A:\BB-1191 Seq List.txt

Output Set: N:\CRF3\03112002\I846589A.raw

L:11 M:270 C: Current Application Number differs, Replaced Application Number

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:15 M:256 W: Invalid Numeric Header Field, Wrong Prior FILING DATE:YYYY-MM-DD